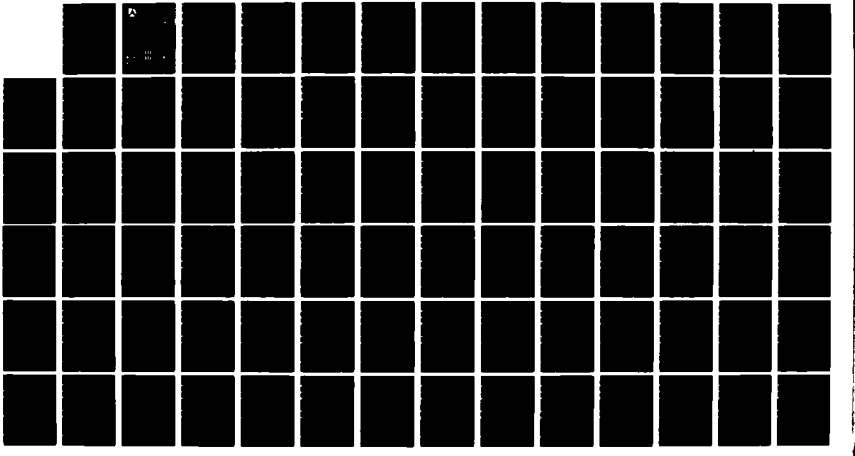
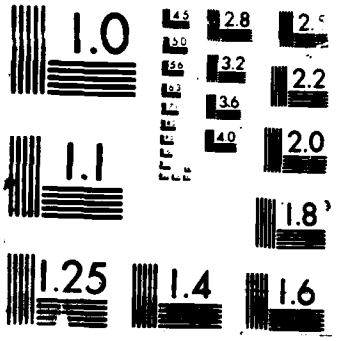
AD-A186 625 THE AIR FORCE NATIONAL GUARD AND THE AIR FORCE RESERVE: POINTS TO PONDER FOR THE FUTURE(U) AIR WAR COLL MAXWELL AFB AL J W CHAN ET AL MAY 87 AU-AWC-87-033 1/1

UNCLASSIFIED F/G 15/6 NL




1.0
1.1
1.25
1.4
1.6
1.8
2.0
2.2
2.8
3.2
3.6
4.0

(4)

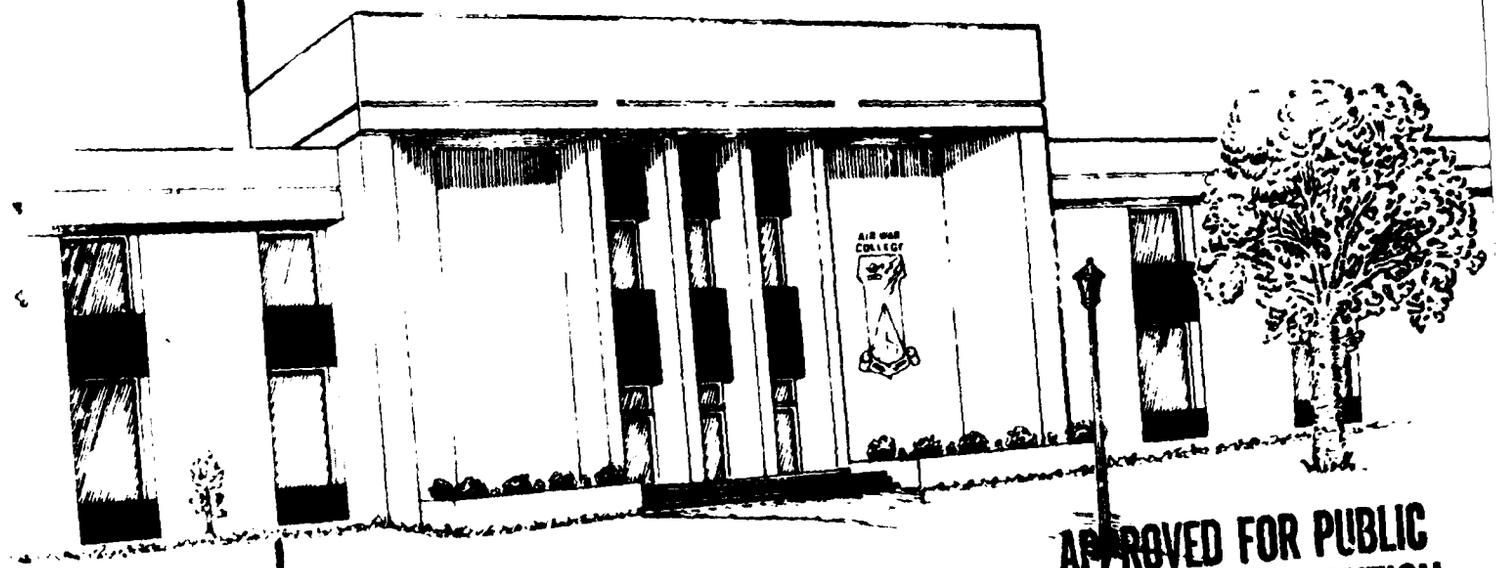
AIR WAR COLLEGE

RESEARCH REPORT

No. AU-AWC-87-033

THE AIR FORCE NATIONAL GUARD AND THE AIR FORCE RESERVE: POINTS TO PONDER FOR THE FUTURE

By COLONEL JOSEPH W. CHAN, LIEUTENANT COLONEL RALPH P. ANDERSON, LIEUTENANT COLONEL ALAN A. BLOMGREN, AND LIEUTENANT COLONEL ALBERT J. LEFKO



AIR UNIVERSITY
UNITED STATES AIR FORCE
MAXWELL AIR FORCE BASE, ALABAMA

AIR WAR COLLEGE

AIR UNIVERSITY

THE AIR NATIONAL GUARD AND THE AIR FORCE RESERVE:

POINTS TO PONDER FOR THE FUTURE

BY

Joseph W. Chan, Colonel, USAF
Ralph P. Anderson, Lieutenant Colonel, ANG
Alan A. Blomgren, Lieutenant Colonel, USAFR
Albert J. Lefko, Lieutenant Colonel, USAFR

A RESEARCH REPORT SUBMITTED TO THE FACULTY

IN

FULFILLMENT OF THE RESEARCH REQUIREMENT

Thesis Advisor: Colonel Larry L. Arnold

MAXWELL AIR FORCE BASE, ALABAMA

May 1991

DISCLAIMER - ABSTAINER

This study represents the views of the authors and does not necessarily reflect the official opinion of the Air War College or the Department of the Air Force.

AIR WAR COLLEGE RESEARCH REPORT ABSTRACT

TITLE: The Air National Guard and the Air Force Reserve: Points to Ponder for the Future

AUTHORS: Joseph W. Chan, Colonel, USAF

Ralph P. Anderson, Lieutenant Colonel, ANG

Alan A. Blomgren, Lieutenant Colonel, USAFR

Albert J. Lefko, Lieutenant Colonel, USAFR

A review of the historical origins of the Air National Guard and the Air Force Reserve and a look at their current structure introduce a discussion of the factors which affect the Air Reserve Forces. Implications of force mix changes and suggestions for improving the Air Reserve Forces are offered to our nation's decision makers.

B I O G R A P H I C A L S K E T C H E S

Colonel Joseph W. Chan is a command pilot with more than 4700 hours flying the OV-10, C-141, C-5, and FE 10 aircraft. He s served as a staff officer at Headquarters, Military Airlift Command, and at the Air Staff, and was commander of the 30th Military Airlift Squadron at McGuire AFB, New Jersey. His most recent assignment was at Headquarters, Air Force Reserve, as the Assistant Deput Chief of Staff for Operations. Colonel Chan is a graduate of the Squadron Officer School, Class 74B, the Air Command and Staff College, Class of 1978, and the Air War College, Class of 1987.

Lieutenant Colonel Ralph P. Anderson is a command pilot with over 3200 hours in the A-1E, T-38, F-100 and C-7D aircraft. He served on active duty from 1968 to 1 4 as an A-1 pilot in SEA and as a T-38 instructor pilot. He joined the 178th Tactical Fighter Group of the Ohio Air National Guard in 1974 and has been an Air Guard Technician with the unit since 1978. He is currently the Group Deput Commander for Operations. He completed Squadron Officer School through correspondence and Air Command and Staff College in summer. He is a graduate of the Air War College, Class of 1987.

Lieutenant Colonel Alan A. Blomgren is an Air Reserve Technician with the 934th Tactical Airlift Group at the Minneapolis St Paul International Airport. He is the Commander of the 934th Consolidated Aircraft Maintainenance Squadron and the Deputy Commander for Maintenance for the 934th Tactical Airlift Group. He completed Squadron Officer School through correspondence, the Air Command and Staff College via seminar, and Air War College by correspondence and in residence with the Class of 1987.

Lieutenant Colonel Albert J. Lefko is an Air Reserve Technician and serves as the Deputy Director of Transportation, Deputy Chief of Staff, Logistics, with Headquarters, Fourth Air Force at McClellan AFB, California. He has completed Squadron Officer School and Air Command and Staff College by correspondence and attended the Air War College in residence as a member of the Class of 1987.

A C K N O W L E D G E M E N T

The authors wish to thank the members of the Senior Officer Professional Military Education Classes 87-02 and 87-03 for their participation in this research effort. These Air National Guard and Air Force Reserve officers spent two weeks of intensive study at the Air War College. In their spare time, they helped us by identifying current issues, clarifying our thoughts, and giving us fresh ideas on how to improve the Air Reserve Component of the Total Force.

L I M I T S O F T H E P A P E R

The Air Reserve Forces (ARF) consist of the Air National Guard and the Air Force Reserve. In this paper, we'll look specifically at those portions of the ARF that have the highest priorities in terms of personnel, training, equipment and general readiness -- ARF units and Individual Mobilization Augmentees (IMAs) of the Selected Reserve. Once mobilized, these are the portions of the ARF that would have the most immediate impact augmenting the active Air Force during the initial stages of any future conflict.

TABLE OF CONTENTS

L I S T O F F I G U R E S

I N T R O D U C T I O N

In a fiscally unconstrained environment, most military planners would probably build the armed forces solely with active duty units because of their inherent flexibility and high state of readiness. The United States (US), historically insulated from world power struggles by its unique geography, has traditionally relied on conscription and reserve forces to meet its wartime manpower requirements. Since World War II, the US has carried a large part of the military burden for the Free World and has maintained a large active duty military force. Since the end of the draft and in the face of increasing defense spending, the US has developed the concept of the Total Force where reserve forces are kept at high levels of readiness to meet some peacetime military demands as well as providing rapid augmentation in times of conflict. The purpose of this paper is to investigate the role of the ARF in this current fiscally constrained environment, and to provide policy-makers with points to ponder when they consider changing the structure, roles and missions of the ARF. To do this, we will first review the historical background and the lessons learned over the years that have contributed to the development of the ARF. Then, we'll look at today's ARF structure and some factors that affect its capabilities. Finally, we'll look at some

implications of force mix changes and proposed improvements on tomorrow's ARF.

HISTORICAL PERSPECTIVES OF THE ARF

The history of the Air Reserve Forces as we know them today can be traced from colonial days when the citizen soldiers defended their rights and property with their own weapons. In the course of the growth and development of the United States into a superpower, Guard and Reserve forces were also evolving into their present-day role. The Air National Guard traces its origins to November 1, 1915, with the establishment of the 1st Aero Company in New York City. "It proved to be a precursor of the 2nd Aero Company, N.G., N.Y. that was organized in Buffalo the following year. The two New York Aero Companies were called into Federal Service in July, 1916, and stationed at Mineola Aviation Field, Long Island." (1:521)

> The United States Air Force Reserve traces its origins to June 1916 when the National Defense Act strengthened the Aviation Section of the Signal Corps and authorized a reserve corps of 2,300 officers and men. The first organized air reserve unit, designated the First Reserve Aero Squadron, was formed in May 1917, and it and a sister unit were ordered to active military service soon after the United States entered World War I. (2:1)

The National Guard Observation units and the Air Corps

Reserve almost became non-existent after World War I. It was only through dedicated efforts of local groups and early air pioneers such as Billy Mitchell that any form of aviation units existed prior to World War II. "On the eve of WW II, there were 1,500 Army Air Corps reserve pilots on extended active duty. These, plus 1,300 non-rated officers and 400 enlisted men, provided the Army Air Corps a small but skilled reserve augmentation in the critical early days of the war." (2:1) In addition, 29 National Guard Observation Squadrons were mobilized and contributed men and equipment.

After World War II, Army Air Corps leaders developed the plans to reestablish separate Air Guard and Air Force Reserve units. Their insistance on having Air Corps-affiliated units evolved into a document entitled, "Approved War Department Policies Relating To Postwar National Guard And Organized Reserve Corps," dated October 12, 1945. The document outlined the following:

1. Basic assumptions
2. Mission
3. Strength, composition, organization and distribution,
4. Personnel
5. Training
6. Instructors
7. Administration
8. State and federal responsibility

In all, the document was very thorough and provided an excellent outline of the structure of the Air Reserve Forces. Key among its basic assumptions were:

> ... no unit should be allotted to the Regular Army, other than required for its peacetime mission, providing it can be equipped, trained, and made ready for its mobilization mission in time of peace, at less expense and more advantageously, in the National Guard or the Organized Reserve Corps.
>
> -The army organization will continue to be predicated on the three Major Forces, namely the Army Air Forces, Army Ground Forces, and the Army Service Forces.
>
> -The target established by the overall troop basis for the Army of the United States automatically determines the personnel strength of the Active Reserve as that balance remaining after deduction of the combined strength of the Regular Army and the National Guard.
>
> -The War Department troop basis will establish the number and types of organizations and units required for an over-all balanced force. The types and numbers of organizations and units of the Active Reserve will be determined by subtracting the number of such organizations and units allotted to the Regular Army and the National Guard from the War Department troop basis. (3:1)

Based on this, the Chief of the Guard Bureau sent a letter dated February 9, 1946, to the Adjutants General of all states, Hawaii, Puerto Rico, and the District of Columbia setting forth "... the guiding principles to be followed in organization of the Air Arm of the National Guard..." (4:1) In the letter, much of the pattern of composition, organization and distribution was established for the post-war Air National Guard. The basis for each state's National Guard manpower strength and number of flying units was the number of males between the ages of 18 and 35. (3:6) Units were generally located in the communities designated by the individual states and frequently reflected local interest or political pressures.

The Air Force Reserve was originally conceived

solely as a filler force, providing the difference between total War Department troop strength requirements and what the Air Guard units could provide. As a rule, its units were co-located on active duty installations.

The basis for the types of flying units to be assigned was outlined in an appendix to an organization plan for the Air National Guard published on November 8, 1945. Of note was the concentration on fighter and light bombardment squadrons; these were deemed to be the most suitable missions for the Air Reserve Forces. Transport squadrons were judged to be unsuitable because of the peacetime mission. Many of the same ideas underlined the establishment, organization and equippage of the Air Force Reserve units. (5:1)

Training for the new units was to be conducted by the respective organizations "...under the supervision of the Commanding Generals of the appropriate Major Forces...in accordance with the policies prescribed by the War Department." (3:17) Training was accomplished by active duty "instructors" assigned to the units for three year periods. (3:20) They exercised no command over the units, being only advisors, but were responsible for explaining War Department standards for training, administration and operation.

With the close of World War II, the farthest thing from the minds of the American people was mobilization of

Reserve forces. Yet in the next two decades, this would occur six times. The six occasions were the Korean War, the Berlin mobilization, the Cuban missile crisis, the capture of the U.S.S. Pueblo, Southeast Asia, and the national postal strike of 1970. Of these six mobilizations, the postal strike and subsequent mobilization of Air Reserve postal and courier groups will not be discussed since this was a non-combatant call-up.

In 1950, North Korean armed forces invaded South Korea. This action led to the largest mobilization of US Reserve personnel since World War II. Over 148,000 Air Force Reserve and 46,000 Air National Guard personnel were recalled to active duty either individually or with units. During the first year, almost 75 percent of the total to be mobilized were on duty. As reports were gathered evaluating the mobilization, many criticisms were levied against the support functions of personnel and administration. Units were able to assemble their personnel within reasonable time frames, but getting them processed for active duty became a nightmare of lost or incomplete personnel and medical records. To investigate the problems encountered during the call-up, a committee was organized under the leadership of Brigadier General Clyde H. Mitchell. The committee concluded

> that the greatest deterrent to a satisfactory recall had been the condition of the basic records of the reservists. This inadequacy caused many difficulties, among which were the inability to locate reservists,

> inability to recall in best skill, lack of knowledge of probable physical conditions, and a minimum of information on changes in reservist's personal affairs. (6:84)

The Air Force set about to remedy the lessons learned during the Korean call-up. Congress greatly assisted this effort by passing three laws: (1) Armed Forces Act of 1952, (2) Reserve Officers Personnel Act of 1954, and (3) Reserve Forces Act of 1955.

> The Armed Forces Reserve Act standardized pay and training categories and established Ready, Standby, and Retired mobilization categories. Patterned after the Officers Personnel Act of 1947, the Reserve Officers Personnel Act established in law a permanent system of promotion for reserve officers. The Reserve Forces Act doubled the legally permissible size of the Ready Reserve, imposed with sanctions the obligation to train, and authorized the recruitment of non-prior service personnel into the Reserves. (6:95)

Changes in the reserve program continued through the 1950s, and with the turn of the decade, the Air Force gave its training commands a more involved role in training and supporting the ARF. (6:98)

The 1961 Berlin mobilization and subsequent show of force produced more unique lessons to be learned. In addition to the large call-up of Army Reservists, the Active Air Force was hard-pressed for additional airlift and placed great emphasis on the embryonic C-124 air transport units of the ARF. A crash program to equip, train, man and recall Reserve C-124 crews strained all resources of Active and Reserve manpower and materiel.

With Headquarters Air Force assistance, the Reserve forces were able to transition to C-124s and be declared operationally ready in time to support the President's Berlin policy.

The Air Force Inspector General, Lieutenant General William H. Blanchard, evaluated the recall of the ARF to active duty and recommended several changes to improve the effectiveness of the Reserve forces. His recommendations were:

> 1. Commanders and key staff should be on full-time duty and meet Regular Air Force qualification standards for appointment and promotion.
> 2. UMDs (Unit Manning Documents) should be standardized for comparable organizations within Reserve forces and be made appropriate for operation as an active duty wing.
> 3. Positions of Air Force advisors to Reserve Forces units should be completely screened and fully manned with selected, qualified persons.
> 4. Air Force support and supervision of aircrew and unit training should be increased to assure preparedness of the Reserve forces.
> 5. Air National Guard units should be equipped to provide adequate support for contingency operations commensurate with their assigned missions. (6:141)

A second and parallel study into the problems encountered during the Berlin crisis was conducted by Major General Robert E. L. Eaton, Assistant Chief of Staff for Reserve Forces. General Eaton's study "...was to identify problems and recommend corrective actions to eliminate their recurrence in future recalls. His staff was particularly interested in problems in the areas of unit effectiveness, personnel, operations, supply, training,

facilities, requests for delays or deferrals and dependent processing." (6:141) Again, problems within personnel processing surfaced as the major irritants during the recall. Probably the three greatest problems of the Berlin recall were: (1) units converting to C-124s; (2) unit members being unfamiliar with directives in maintenance and personnel; and (3) immediate reorganization of units after recall, which was also a big lesson of the Korean call-up.

The Cuban missile crisis recall of the ARF came less than 18 months after the Berlin recall and lasted from October 19 to December 29, 1962. Many of the lessons learned in previous mobilizations had already been put to good use. For example, problems noted in personnel processing were drastically reduced. A review group composed of 79 officials from throughout the Air Force identified several problem areas requiring further Air Staff review. They were:

1. Low level of manning
2. Shortages of pilots
3. Insufficient Active advisor manning
4. Inaccurate reporting of unit readiness
5. Security of classified materials
6. Shortages of equipment
7. Improper documentation of training
8. Low readiness of aerial port units

(6:131-132)

The overall conclusion, though, was that the ARF had successfully completed all assigned missions. General Curtis E. LeMay, then Chief of Staff of the Air Force reflected his satisfaction by noting, "This demonstration

of responsiveness of the Air Reserve Forces underlines the importance of maintaining and further supporting the readiness of this vital element of the Air Force capability." (6:184)

It would be just six short years later that the ARF would be called to assist active duty forces who were already engaged in Vietnam. In January, 1968, North Korea captured the U.S.S. Pueblo. Until that time, President Johnson had not mobilized the Guard and Reserve forces in spite of the heavy military commitment in Vietnam. This incident caused the President to mobilize selected ARF units and send them to Korea, Japan, and, to a lesser extent, Europe. Initially, only C-124 airlift units were recalled; but before the Pueblo incident wound down and the US withdrew from Vietnam, additional Guard and Reserve forces were mobilized and assigned throughout Southeast Asia. Upon demobilization of these forces, the Continental Air Command (the forerunner of today's Air Force Reserve) submitted a report to the Air Staff, stating:

> Although it appears many problems arose during the 1968 mobilizations, the general consensus of this headquarters was that these were the most successful mobilizations experienced by the Air Force Reserve during recent times. (6:237)

The lessons of past mobilizations have been put to good use, but not overnight. Today's Guard and Reserve units continually train not only for their wartime tasking but also on how they will mobilize their personnel and

equipment when recalled. The current mobilization process involves everyone from the President and the National Security Council, through the Secretary of Defense and Joint Chiefs of Staff, down to the individual Guard and Reserve unit. The coordination and planning procedures are complex. Continual testing and evaluation of the alert and recall systems will aid in minimizing problems in future mobilizations.

TODAY'S ARF STRUCTURE

In 1970, Secretary of Defense (SecDef) Melvin Laird announced the Total Force Concept, a major reversal of policy whereby the Reserve components, rather than the draft, became the initial source of augmentation to the active force. (2:14) This capped an evolution over the years which saw the Guard and Reserve change gradually from a force actually held in reserve, having substantial time to mobilize and train, to a force constantly ready and available to rapidly reinforce the Active components. (2:3) In 1973, SecDef James Schlesinger proclaimed the Total Force Policy, integrating the Active, Guard and Reserve into a homogeneous whole. Consequently, Guard and Reserve units were tasked to meet the same readiness standards as the Active forces, and the Services had to assure that they would have appropriate equipment, facilities,

training and manning policies. (2:14) In 1982, SecDef Caspar Weinberger issued a policy memorandum to the three Service secretaries and the Chairman of the Joint Chiefs of Staff, directing that high priority units of the Guard and Reserve must have the equipment to perform their mission. Furthermore, Active and Reserve component units deploying at the same time should have equal claim on modern equipment. (8:14)

Today's ARF is the world's fifth largest air force, employing more than 193,000 people and possessing more than 2100 aircraft. (9:32; 10:189; 11:190; 12:86) Figure 1 shows the types of aircraft flown by the ARF, while Figure 2 indicates the magnitude of ARF contributions to the Total Air Force. The Active Air Force provides the ARF with its wartime tasking and the training criteria and objectives required to accomplish that tasking. To measure ARF readiness, the Active Air Force does the inspecting and evaluating as well, using the same standards throughout the Total Force. This close integration of the Active and ARF also extends to the preassignment of units and individuals to Active force gaining commands or functional areas with which they will serve when mobilized. (13:19) Because the Air Force recognized the potential of the Total Force Concept during the early 1970's and took immediate and continuing steps to implement the policy, today's ARF is better equipped and more qualified to fight than the

Reserve components of the other services. (7:257)

FIGURE 1.

ARF AIRCRAFT

TYPE	NUMBER
A-7	347
A-10	204
OA-37	53
F-4	794
F-15	20
F-16	51
F-106	78
C-5	8
C-22	4
C-123	4
C-130	372
C-131	26
KC-135	126
T-33	40
T-39	4
T-43	4
H-1	19
H-3	25
TOTAL	2178

(Current as of 30 September 1985)
(14:48)

FIGURE 2.
ARF CONTRIBUTIONS TO THE TOTAL FORCE

ARF FLYING UNITS	% OF TOTAL AIR FORCE
Aerial Spraying Capability	100
CONUS Strategic Interceptor Forces	78
Tactical Airlift	58
Tactical Reconnaissance	49
Air Rescue/Recovery	37
Tactical Fighters	34
Special Operations	34
Weather Reconnaissance	28
Tactical Air Support	24
Aerial Refueling/Strategic Tankers	21
Support Aircraft	21
Strategic Airlift Aircraft	9
AIRCREWS (Associate Program)	
Strategic Airlift	50
Tanker/Cargo	50
Aeromedical Airlift	30
ARF NON-FLYING UNITS	
Aircraft Control and Warning Units	72
Combat Communications Units	66
Aerial Port Units	60
Combat Logistics Support Squadrons	60
Engineering Installation Units	55
Tactical Control Units	55
Strategic Airlift Maintenance Personnel	40
Civil Engineering RED HORSE	34
Civil Engineering PRIME BEEF	34
Aeromedical Evacuation Crews	30
Medical Service Personnel	22
Weather Units	15

(Current as of 30 September 1985)
(14:48)

CURRENT FACTORS AFFECTING THE ARF

DEMOGRAPHICS. One area of growing concern is demographics, or simply, what will the "baby bust" era do to the structure of the Total Force? Many recent studies of US population trends indicate that there will be a severe recruiting crunch in the late 1980s and early 1990s as the pool of eligible (18 to 24 year old) males declines by 15 percent from mid-1970s levels. (15:11) The number of males reaching the age of 18 peaked in 1980 at 2.13 million and will decline to 1.6 million by 1995. (16:21) In 1977, the armed forces recruited 1 out of every 5.6 18 year old males, in 1985, they required 1 out of every 4.6, and by 1995, they will need 1 out of every 4. (16:21)

The all volunteer force has had a dramatic effect on the ARF, most of which has been seen as positive. In the 1960s, the ARF recruiting mix was 70 percent non-prior service (NPS) individuals and 30 percent prior service enlistments. When the draft ended, this mix almost reversed, going to 35 percent NPS versus 65 percent prior service. This came just as the Total Force Concept was adopted and the ARF was receiving modern equipment and more combat missions. The influx of active duty experience in the middle of this changeover was a tremendous boon to the

ARF and had a lot to do with its ability to achieve and maintain high levels of readiness. This recruiting mix has tapered off to a 45/55 percent NPS/prior service mix since 1978. (17:51)

As we approach the 1990s, the ARF has a multifaceted recruiting problem. If active duty retention remains high and fewer people leave the service prior to retirement, there will be increased demands on NPS recruiting for the ARF. The ARF also has a substantial aging problem in its force caused by the high prior service recruiting of previous years and by the manpower stability within ARF units. For example, while the Active Air Force has approximately 4 percent of its members between the ages of 41 to 45, the ARF has over 12 percent in this same age group. (18:28,34) As this large group reaches retirement age, this will place even more demands on recruiting. Finally, the programmed growth of the ARF itself dictates increased recruiting efforts. Combine these with the "baby bust" problem previously mentioned, and it is apparent that the Total Force faces a requirement to recruit ever more people from a dwindling pool that is already heavily tished.

A related problem is the fact that recruiting is different for the Selected Reserve. While the Active Component can use the entire US as a recruiting base, the ARF generally recruits at the unit level from the local

area. Some ARF units may find that the demographics of their local areas have changed since those units were established in the post-World War II era. The US has experienced tremendous population shifts toward the "Sun Belt" in the last 40 years, and many ARF units may discover that such shifts have eroded the demographic characteristics of their local areas to the point that they may have problems meeting present recruiting needs. High technology mission requirements make these problems worse where people with specific skills have tended to migrate away from some areas in favor of others.

DIFFERENT CAPABILITY. When deciding to change the force mix or increase the size of the ARF, one must consider the differing levels of readiness and combat capability inherent in full-time and part-time organizations. In the same way that the week-end golfer is generally less proficient than the professional golfer on the tournament circuit, the average Reservist or Air Guardsman will not have the same degree of skill or proficiency as the average Regular. The Air Force has historically wrestled with this question and has recognized that there is some reduction in the capability that is readily available in the ARF. Rather than requiring ARF units to maintain 100 percent capability in such missions as special munitions delivery, aerial delivery, or night

interdiction operations, the Air Force has modified the taskings in many cases to require fewer training events or less than 100 percent proficiency from all members of a squadron. For example, the Air Force requires the typical Active duty fighter pilot to fly 46 sorties semiannually to meet minimum combat ready criteria whereas a Reserve pilot would only need to fly 32 sorties during the same period. (19:3-4) At the same time, the Air Force has considered the generally less capable state of the equipment assigned to the Air Reserve components by not assigning the full range of wartime missions that their Active component counterparts might have. It is unrealistic to expect the ARF F-4 squadron flying 20 year old airplanes to be able to perform as well as the Active F-15 or F-16 squadron with airplanes fresh off the production line. The weapons, electronic counter-measures equipment and basic reliability of systems all play a role in this. Even in those instances where both the ARF and the Active forces have the same basic equipment like the F-16, the newer, more capable aircraft -- the C and D models -- are assigned to the Active units, while the ARF has the earlier A and B models.

DIMINISHING RETURNS. The issue of defense costs will always be a prominent consideration in the minds of Americans -- it was even at the time of the founding of this nation. President Washington argued against

maintaining standing armies for that very reason. The ARF has enjoyed remarkable growth as the beneficiary of the Total Force Concept because there were cost savings achieved by assigning certain missions to the ARF. The law of diminishing returns is becoming a consideration now because there are some situations where the ARF may not be the cheaper way to go. As weapons systems become more complex and peacetime mission commitments increase, it is questionable whether a particular mission can be done more inexpensively by the ARF. There is also a basic inefficiency inherent in the structure of the ARF. Demographics is the most important factor in locating ARF units because most people can only travel limited distances for weekend training. This factor establishes the recruiting base for a given unit and generally limits the size of that unit. The Active force, on the other hand, is not limited to local recruiting and can size its units to take advantage of the economies of scale. As a result, ARF flying units usually consist of one squadron per location. whereas Active units often have three or more squadrons per base.

MOBILIZATION IMPLICATIONS. Since the 1973 birth of the Total Force Policy, the Active Air Force has decreased in size by 13 percent while the ARF has grown by 35 per cent. (20:1) By the end of Fiscal Year (FY) 1987, total

Air Force strength will be 800,000 people, with 24 percent of that number in the ARF. (21:332) What are the implications of the past 14 years of sustained real growth in the size of the ARF and its growing proportional size relative to the Active Force?

First, civilian and military leaders must look at the effects of any future mobilization of the ARF in terms of both foreign and domestic impact. Traditionally, governments have closely watched the mobilization of reserves because this action has been one of the key indicators of a nation's resolve and willingness to declare war. With so much combat capability in the ARF and the prospect of even more in the future, it may be difficult for the US to take any significant military action without mobilization. (22:77) If the US had to mobilize to meet a low intensity conflict or some other contingency short of general war, there might be a danger of overreaction from other nations who hold the traditional view that mobilization is the precursor to a declaration of war.

Domestic considerations are equally important if mobilization seems more likely in the future because of the increasing size of, and reliance on, the ARF. While some federal, state and local government agencies and private enterprises have looked at the potential impact of mobilization, only a few have identified key, essential positions that shouldn't be filled by members of the Guard

and the Reserve. Such identification may be crucial to ensure that the public and private infrastructure of the nation will continue to operate after mobilization. Many people in the ARF have military duties that are related to their full-time civilian occupations in fields like aviation, transportation, medicine and engineering. (7:260) Without a comprehensive study of the civilian employment of ARF personnel, we really don t know how mobilization would affect the manpower of local police and fire departments, civilian hospitals, commercial airlines, and key defense industries.

TRAINING. Air Force training can generally be divided into three categories -- basic, technical, and continuation training. At the basic and technical levels, the ARF relies to a large extent on the Active component schools to provide the training for its personnel. Much of this training is very expensive, such as basic military training, officer training school, undergraduate pilot and navigator training, and many of the initial technical training schools. Except for the pay and allowances of the ARF trainees, the Active Air Force pays for all costs associated with these schools. This is often forgotten when force mix issues are debated and can skew the arguments somewhat if training costs are omitted. For example, the typical ARF fighter squadron is cheaper to operate in

peacetime than a typical Active fighter squadron; but the Active Air Force still has to operate most of the schools that provide the pilots to both components. The infrastructure to administer this training requires a full-time force and it is doubtful whether there would be any meaningful cost differences if this mission was handled by the Active or the Reserve components.

ARF units accomplish continuation training using their own resources, either at home base or during exercises. This is the area that is the biggest money saver when comparing the ARF and the Active force. The ARF sustains a lower activity level than similar Active forces because of their part-time operations and because they train to different levels of capability. In spite of this, they still provide a high level of combat readiness because of the high percentage of prior service personnel, many of whom have combat experience. These members also tend to remain with their units longer than their active duty counterparts.

AVAILABILITY. The availability issue concerning reservists is twofold. The first aspect is whether the individual reservist will show up if mobilized, and the second is whether the reservist has enough time to meet the continuation training requirements to maintain a high level of readiness. These two issues can be folded into the

concept of response time, or what is called "the basic military difference":

> In broad mobilization planning terms, the response time is the basic distinguishing feature between active and reserve forces. Given enough time, the most under-trained, undermanned, and under-equipped reserve unit can be brought to the point of combat competence sufficient for use as an active duty unit. This process might take days, months, even years. Thus response time becomes a pivotal consideration. (23:25)

The present situation dictates a rapid mobilization scheme for the US reserve forces. This is generally referred to as the "come as you are war" and is the result of our forward deployments around the world and the faster pace of modern warfare. This requires that the reserves maintain a high level of readiness and that all personnel must be available when mobilized.

During the Korean call up, the reserves experienced drop out rates of approximately 20 percent. (24:63) Since then, much has been done to rectify the problems encountered during mobilization. Entry and retention standards have been tightened, and the legal and political laws for mobilization are much clearer than they were in the early 1950s. During the last callup in 1968, in which more than 10,000 reservists participated, the dropout rate was less than 1 percent. (24:63)

Another area of concern is the availability of AFR pilots holding full time jobs as commercial airline pilots and the possible conflict that this might cause with

requirements for the Civil Reserve Air Fleet (CRAF) in a mobilization. (The CRAF is a fleet of civilian aircraft and their civilian crews from the airline industry that can be called by US national authority to augment our Military Airlift Command.) This problem was investigated in a Rand study in 1979, which discovered that of the 29,000 pilots employed by the major US airlines, only 2.5 percent were reserve pilots, which would present no real problems. (24:63). Recent studies, however, have surfaced a new problem in this area. The air freight industry has grown dramatically during the early 1980s. These companies don't fly as many sorties per day on their aircraft as the traditional airlines do, and therefore they do not hire as many crews per airframe. There is a large number of reserve pilots working for these air freight companies and this would cause a problem for the CRAF in a mobilization because these companies provide a large portion of the most desirable wide body cargo aircraft in the CRAF. This problem has been partially solved by making arrangements to form a pool of civilian pilots within the air freight industry to interfly their aircraft to meet the CRAF commitment. This reopens questions about the CRAF as a whole, however, because we're not sure how the pilot population of the other major airlines has changed since 1979. Perhaps it's time for another Rand study.

The other side of the availability issue concerns

the demand for day-to-day availability for training of the individual, part-time reservist. It's difficult to construct a profile of typical availability because some reservists live close enough to their units to train during the evening after work, while others live far away and can only train on weekends and during vacations. In any event, let's assume an average reservist has a 40 hour-a-week civilian job and a two week vacation per year. This would provide 50 weekends (100 days) and 14 days of vacation, or a total of 114 days a year to devote to reserve training. The minimum participation requirements for a member of the Selected Reserve is 12 weekends and 15 days of annual training, or a total of 39 days per year. Aircrews, on the other hand, have the same basic requirement plus an additional 48 flying training periods to maintain minimum flying proficiency, which adds up to roughly 87 days per year. The increasingly complex nature of war and the weapons systems required to fight that war, in addition to more realistic training in the form of overseas exercises and part-time missions, have added considerably to the training load since these minimum participation requirements were established. The following are some average participation rates for reservists in 1986: an F4E pilot put in about 144 days, the F-15 crewmember served 110 days, the average officer put in 53 days, and the average enlisted person put in about 80 days.[25:...]

In summary, the average reservist, particularly the aircrew member, has just about used up all of the available spare time away from his or her civilian job to devote to military training. While this speaks well for the dedication of our part-time warriors, it also points out that this country is rapidly approaching the limit of what can be expected from the Air Reserve component of the Total Force mix.

THE ROLE OF CONGRESS. One facet of the Air Force Reserve and the Air National Guard that warrants thorough examination is the part played by Congress in the determination of the structure, missions, and force mix of the Air Reserve Forces. For instance, does the legislative branch do more than just appropriate the monies and approve the programs proposed by the Department of Defense (DOD)? Is some of the command and control of the Guard and Reserve, in fact, usurped by Congress? Do individual Guard and Reserve units achieve changes in equippage or mission through lobbying efforts directed at Senators and Representatives? Do Air Guardsmen and Air Force Reservists perceive that Congress is involved directly in the determination of force mix, roles, and weapon systems? Or is Congress' role vis-a-vis the Air Reserve Forces strictly one of appropriation and authorization? Do the Air Force and the DOD retain the decision-making authority and the

responsibility for everything that happens within the ARF? Can the Air Staff determine, with impunity and without fear of being overruled, that drastic changes in structure or mission within the ARF are necessary? Can the necessary programming action be accomplished and the changes be implemented without retaliation? Is there, as some critics have alleged, a tendency for Congress to micro-manage and concentrate on minutia in pursuit of what some regard as "pork barrel" interests? These questions and others will frame the discussion and review of the role of Congress.

Perceptions are often more important than the truth, so it is probably instructive to begin by discussing some of the commonly held beliefs of members of the ARF. Many Air Reservists and Air Guardsmen indicate that they feel that Congress plays a direct and prominent role in the identification of missions, equippage, command and control, structure, and force mix for the ARF. Many cite specific examples, although often based on hearsay, of direct intervention by a Senator or Representative on behalf of a constituent unit or Reserve unit. Activities which lead to a reduction in the force structure, a change of mission, or an increase in authorized manning are frequently attributed to the actions of a legislator or his or her staffers. Many ARF members appear to believe that expenditures are served by active participation in legislative direct or through professional organizations such as the Guard Association or

the Reserve Officers Association. In some cases, the perception is that Congress proposes and the Air Force reacts.

Congressional Quarterly Incorporated publishes a variety of documents and conducts seminars intended to assist personnel in understanding how the legislative process works. In the introduction to the book, How Congress Works, the editor notes some fundamental changes which have taken place in the past decade which prompt a much greater responsiveness on the part of the individual legislator to the interests of his or her constituents. The legislative process is now much more visible to the individual voter, and the advent of instant communications heightens the "congressional willingness... to finance more and more special services aimed at the home folks." (26:1) "The cumulative effect was to make members of Congress more independent of party appeals by their leaders and more dependent on special interests and movements back home." (26:1) In light of this, it is probably not surprising that members of the ARF feel that they get a generally positive response from their legislators when approaching them about improving the situation in the local Guard or Reserve unit. The real question is, what can the Congressman do and what really happens?

"The Founding Fathers did not expect the lawmaking function to be unduly burdensome because they thought

Congress would confine itself chiefly to external affairs and leave most of the domestic matters to state and local governments." (26:37) "Today much of the legislation considered by Congress originates in the executive branch..." (26:39) Indeed, it would seem that the branch of government most conversant with the problems and daily affairs of an organization would be in the best position to initiate changes that would improve the overall operation. That apparently isn't necessarily how things actually work.

The Budget and Accounting Act of 1921 strengthened the executive branch in that it enabled the President "to draw up a unified national budget - a detailed business and financial plan for the government that reconciled proposed spending and estimated revenues." (26:37) The most significant piece of recent legislation to affect the actions of the Congress is the Congressional Budget and Impoundment Act of 1974. "It required Congress to set out the nation's priorities in a spending plan for the coming fiscal year." (26:1) This had the effect of drawing the various Congressional committees more firmly into the reconciliation process and inevitably reduced the impact that the individual Congressmen could have on a specific piece of legislation. "Using this process, authorizing committees were required to modify their programs so that funding for them fell within the budget guidelines." (26:1) As a consequence, the budgetary process has assumed a new,

and almost totally pervasive, role within Congress. Congressmen, critics, and advocates of the current system all seem to recognize that a whole new power base and method of operating was created with the implementation of this law.

The individual legislator serves two functions. He or she is both a lawmaker to the nation and an emissary from the people of a specific area of the country. (26:153) Because of the increasing effect the national government has on the lives of the constituents of each Senator and Representative, members of Congress find themselves pressured to respond to a great variety of issues. "The Constitution gives Congress specific legislative powers, but it does not spell out the duty of members to respond to constituent demands...The relationships between a member of Congress and his constituents is the crux of self-government in the United States." (26:153) One of the common desires of legislators is to find a consensus or sense of the mood of his or her constituency on any given subject. As a consequence, direct communication is encouraged. At the same time, the legislator is also pursuing that consensus through the media, special interest groups, other members of Congress, and other elected officials.

The presence of a group of people with a common goal within his or her constituency becomes a source of

considerable influence to the legislator. In the case of an ARF unit determined to effect change, a significant statistic becomes available to the legislator in the quest to determine a consensus among the constituency. Not only are the majority of the members of the organization likely to be active participants in the voting process, they also represent two other considerations to the Congressman. The ARF member has the capability to directly affect the opinions of others with whom he or she comes in contact, and there is the consideration of the permanancy of the ARF member's residency. Many members of Guard and Reserve units joined right after high school or after a stint in the Active military establishment. Their sense of commitment and belonging becomes a powerful motivator and is a significant factor in their voting behavior, support for political candidates, and any lobbying they may do on behalf of their organizations.

In addition, Congressmen appear to be prominent players in the direction provided to the ARF because many of them apparently perceive the National Guard and Reserve Forces to be a less expensive means of providing for the national defense. "The total-force policy was promulgated in 1973 by Secretary of Defense James Schlesinger. It was conceptualized...by his predecessor, Mel Laird, three years earlier." (27:1) What has happened in the interim is that Congress has endorsed the concept and essentially

dictated its expansion. "In a world of limited resources and competing social, economic, and national security demands, valid arguments exist on all sides concerning how the resource pie should be sliced." (27:1) In the course of hearing and weighing these arguments, the legislators have been forced to deal with a dilemma. On the one hand, the DOD argues that progress is being made, that cost savings are being achieved, and that the primary consideration should be the effectiveness and availability of the forces. This argument tends to support the continuance of a large, active duty force. The other side of the issue is taken by those who argue that far too much is being spent for defense, that costs can be reduced by transferring more missions to the reserve forces, and that DOD should be forced to make the changes quickly.

"There are at least two broad motivations for considering shifts in the mix of active and reserve forces -- (1) to save money, or (2) to improve the military balance of forces." (7:230) "Reserve forces appear to have some inherent advantages over active forces with respect to gross costs." (7:231) Congressional committees have been provided estimates of potential savings that vary from 30 to 70 percent if a mission being performed by the active duty component is assumed by a Reserve unit. (7:234) As a consequence, Congressmen routinely express their interest in modifying the force mix as a means of reducing the total

bill for national defense. "...Let us give them more missions, more jobs." (7:40) "Cost comparisons are ...the reason we have reserve forces...they cost less than active forces." (8:1) That costs have become the overriding issue to Congress should really come as no surprise.

What should be more to the point is the question of Congress' expertise on military matters and the actual role played by the legislative branch in the formulation of policy. As we have seen, there is a strong incentive present to the Congress that promotes both an interest in the affairs of the AFF and in finding cheaper ways of providing for the nation's defense. The historical basis for executive branch management of the affairs of the military can be found in both the Constitution and in the implementing laws of our nation. The intention was that the DOD provide direction, guidance, and implementing authority to the individual Services consistent with Presidential policy and Congressional concurrence. The expertise, corporate knowledge, and responsibility was to be vested with the people most familiar with the issues and problems.

According to former Senator Gary Hart, there really aren't that many people in Congress who are really interested in the quality of the military or in the ability of our forces to effectively defend this nation in time of war. "Most of the debate is about money." (9:13) He

also suggests that membership on the committees charged with overseeing the armed services is neither a guarantee of expertise nor a commitment to ensure quality or readiness.

Considering all of this, the degree to which Congress is perceived to be involved in formulating policy for the armed forces warrants greater attention. As we have noted, many members of the ARF are convinced that a considerable amount of the policy and structure operative in the Air National Guard and the Air Force Reserve is the direct result of Congressional direction. As an example of why this perception exists, the following language can be found in DOD Authorization Act, 1983, House Committee On Armed Services Report No. 97-482: "(The Air Force should) prepare a plan which provides an expanded heavy airlift mission for the Air Guard...(and) the Committee is directing that the active Air Force shall create no new strategic airlift units to accommodate delivery of the C-5B aircraft...'" (7:321) That language led to the conversion of two ARF units, the Jackson, Mississippi Air National Guard unit and the Andrews AFB Air Force Reserve unit, with C-141B aircraft transferred from the Active force.

That same House Armed Services committee went on to request "a copy of the Rand Study...addressing...specific missions which can be assigned to the Guard and Reserve forces without adversely impacting readiness and yet at the

same time producing substantial savings." (7:32). That study has been released in draft form to selected offices for review and comment, but has not been published and made officially available.

A separate cost analysis study done by the same authors has been published and provides an excellent opportunity to look at cost differences. (12:vi) "The cost differences between similar Active and Reserve units vary greatly depending on the specific type of unit. If the Reserve combat units are labor intensive, and if there are few full-time personnel, then their annual operating and support costs generally are substantially less than those of comparable Active combat units."(30:vi) A specific example provided in the summary is that,

> The Air National Guard (ANG) C-130E unit has annual operating and support costs equal to approximately 72 percent of a similar Active unit. For both Active and Reserves, the total annual unit costs are approximately half equipment-related and half personnel-related. The ANG personnel-related costs are 75 percent of the active unit personnel costs, and the ANG equipment-related costs are 67 percent of the active s equipment-related costs. (30:vi)

That data is qualified somewhat in the study because, "the model deals solely with annual unit O & S (Operations & Support) costs at proposed peacetime operating tempos...and...no conclusions about the desirability of transferring equipment or missions from one component to another can be drawn from examining O & S costs alone." (30:v,vi) "The costing information...must be joined with

assessments of the combat capability provided by alternative force mixes." (30:v) The model did not consider the initial costs of equipping and manning the ARF unit, which would include such costs as research and development, or many of the expenses of training the individual personnel. It did not attempt to examine the effect of different force mix strategies, operating tempos, or levels of proficiency and performance.(30:vii,25) In many cases, the utilization of equipment possessed by ARF units is lower than that demonstrated by a similarly equipped active duty unit. In the case of this study, the underlying assumption was that each unit could perform its mission tasking equally well in all scenarios and that the only relevant statistic was total cost.

The Rand corporation has done similar studies in the past. The conclusions have been relatively consistent, as have the qualifications or caveats about taking the published findings only at face value. "Criteria other than cost are relevant to force-mix decisions."(30:25) The Assistant Secretary of Defense for Reserve Affairs has testified in hearings before the subcommittee on Manpower and Personnel of the Senate Armed Services Committee that, "as our missions and equipment become more complex, our ratio of full-time support personnel will necessarily increase." (31:28) This qualification is reiterated in one form or another by the Chief of the Air Force Reserve's

staff and by the Director of the Air National Guard. "Missions which require full time, peacetime intensive activity are not appropriate Reserve missions..." (32:1) The message is that the ARF won't be less expensive to operate if its units are assigned active duty missons that are manpower intensive in peacetime and have little demand for increased capability in time of war.

One might well ask the question, if this is the message that the military establishment is trying to convey, has it been understood by the members of Congress? The most appropriate bodies to reflect upon this message should be the Senate and House Armed Services Committees. "Much of the business of Congress is done in committee. Modern law-making requires an understanding of many complex subjects, and the committee system provides a means by which members can attain a high degree of specialization in certain areas." (26:79) The Armed Services Committees are extensions of the original Naval Affairs and Military Affairs committees. Their purview is all matters relating to status of the DOT. This engenders tremendous scope and power. "(The committee chairmen) wield great influence over the fate of legislation, and thus over government programs and operations."(26:79)

"The Armed Services committees usually have members from California, New York, and the Deep South, where defense related industries and ship-building plants are

concentrated." (26:87) Perhaps this phenomena is intended to capitalize on the potential that Congressmen from these areas are more likely to be well-versed on the roles, needs, and capabilities of the military, but it is also possible that prior experience and extensive knowledge are not important commodities in the selection process. Former Senator Hart suggests as much, as do the authors of How Congress Works.

More important, in many respects, than the relative experience and interest of the committee members are the committee staffs and the staffers who work directly for the individual Congressmen.

> Most Congressional offices are organized similarly, each containing an administrative assistant, legislative assistants, caseworkers and at least one press aide...Members cannot handle the heavy Congressional workload on their own. They need legislative assistants for substantive and political guidance because the daily congressional agenda is filled with complex, interdependent issues. There are more committee meetings than a member can adequately prepare for...A member must rely heavily on staff at every major phase of the legislative process. (26:124-5)

"Today's staffers are more highly qualified than ever before, and they come increasingly from professional rather than political backgrounds." (26:127) In particular, the committee staffers become extremely well-versed in the subject matter. "The influence of the staff bureaucracy has grown over the years as many members, swamped with a workload of increasing bulk and complexity, rely on their

aides for policy recommendations and professional expertise...There is a feeling among some members that too many decisions are getting away from the persons who were elected to make them." (26:105) In some cases, because of tenure, aptitude, experience, and perseverance, a staffer can single-handedly take on an issue and change the outcome of legislation or a vote on a matter before Congress. This obviously magnifies the need for the DOD to ensure that the appropriate committee members, staffers, and aides understand the implications of changing the roles and missions of the ARF.

THE BUDGET PROCESS. On the other hand, whether it is the individual Air Guardsman or Reservist, the leadership of the ARF, or members of the Military Reform caucus in Congress, there is a concensus that the Guard and Reserve must have modern, combat-ready equipment. To this end, a great many people dedicate extensive manhours and effort in identifying those needs through the Planning, Programming & Budgeting System (PPBS).

[illegible] writer that has criticized DOD leadership [illegible] on the budgetary process to the exclusion [illegible] for the defense of the country. Many of his critics argue that he and his compatriots have become [illegible] and the egg argument." Regardless of who is closer to the right answer, the essence of the issue

is resource allocation. PPBS has its roots in attempts to reform that allocation process in the early 1970s. "PPBS is the DOD resource management system...its purpose is to identify mission needs, match them with resource requirements, and translate them into budget proposals." (33:1) The expressed goal is to "provide a better guide to developing programs and budgets." (33:1) National security policy, as provided in National Security Decision Directives, is the basis "from which the Defense Guidance is developed." (33:3) The Five Year Defense Program (FYDP) and the DOD portion of the President's budget submission to Congress evolve from the Defense Guidance.

The rest of the PPBS process is a classic example of the ebb and flow of influence and the fluidity of the decision-making process in a democratic government. Each initiative that is developed as a result of the Defense Guidance must enter the PPBS network as an element of the Program Objective Memorandum (POM). Countless hours of development and justification go into every POM. Threat assessment and opportunities, policy, strategy, force and resource planning, fiscal constraints, and all major issues are gleaned from the Defense Guidance and used in the POM's development. (33:14,17) Using a process known as Mission Area Analysis, Air Staff planners establish a "listing of capability improvement needs and limiting factors..." that is articulated in the Air Force Planning Guide. (33:15)

All of this is used in the programming phase of the POM process. After the POM has been developed from the Five-year Defense Program (FYDP), the Defense Guidance (DG), and "senior leadership...initiatives (and) inputs," the review process begins. (33:17) In essence, each proposal runs a gauntlet of boards and panels in which each facet of the proposal is critically evaluated. To track this process, a Program Decision Package is used. This functions in much the same way an audit trail or an accounting ledger does and serves as a history of the decision-making process on a portion of the program. The POM development incorporates all of the various requirements and then orders/prioritizes them. In this process, modernization, force growth, research and development, readiness, sustainability, operations, training, and directed programs compete to be included in the Budget Estimate Submittal that is presented to the Office of the Secretary of Defense as an initial baseline. (33:20,21) Program Exercises are then conducted to "refine program costs estimates and update the Five Year Defense Plan." (33:24) After all program adjustments are made, the Total Force and Financial Program (TFFP) and a series of program documents are prepared that include Air Force recommendations on force levels, manpower requirements, and procurement needs. All of this is formatted by appropriation code and includes the necessary supporting rationale. (33:27,28) "The [DoD] FY&FP reflects

the program approved by the SECDEF and is consistent with the DOD FYDP. It provides expansion of detail over the FYDP for AF program elements and their cost data are summarized by major program, appropriation, cost category, and cost element." (33:38) The ultimate goal of all of the iterations in the submission of a Presidential budget that provides for the necessary manpower, facilities, aircraft, missiles, and operating funds to enable us to overcome the threat." (7":39) The PPBS cycle "does not evolve in isolation. Rather, several cycles are simultaneously in progress. In fact, if enactment and execution activities are included, four cycles overlap each other. This is significant because unexpected events in one cycle can impact a cycle in an earlier stage of development." (33:38) What is perhaps most important to take away from this summarization is that the process is dictated by law and incorporates the expertise of the most knowledgable personnel available at all levels of the federal government from the President and the National Security Council to field commanders. The Major Commands (MAJCOMS), panels, committees, Air Staff Board, and the Air Force Council all review, prioritize and refine the submission so that threat, strategy, requirements, programs, and funding are "in sync". (7 :18,39)

The magnitude of this effort is hard to quantify, but obviously involves a great deal of careful

consideration of all relevant factors. There are critics of Congress who suggest that this is where the whole issue of "relevancy" ends. Senator Barry Goldwater has suggested that "the new guard in Congress...don't think of national defense; that is not an important item to them. They think only of getting re-elected, of what they can get to be built in their own state or district." (34:78)

> "They put their hands on the Bible and swear they will defend the Constitution against all enemies, foreign and domestic." But instead of living up to these high principles, many members, he feels, deal with defense issues mainly in terms of currying favor with their constituents... At the root of the problem, he suggested, is the fact that most of the voters who "are patriotic, country-loving Americans just don't know what the boys in Washington are doing to their defense." (34:79)

This criticism is echoed in one form or another by a great many people. The Air Force frequently finds itself with direction but no money or with equipment that is inappropriate. "For four years in a row...the military had to live under a CR (continuing resolution, a makeshift arrangement to compensate for Congress's inability to pass authorization and appropriation bills, which is no way to run any part of the government." (34:80) Another manifestation of this is that the air force will be directed to increase a mission or to provide different equipment to a theater commander without allowing for the time to get all of the wheels in motion. A specific example would be the allocation of strategic airlift assets (C-5

and C-141) to the ARF before facilities are available and before the proper funding had been programmed for through the PPBS. "One of the most vexing, hoary questions that plagues the relationship between Congress and the Pentagon is line item management, meaning the tendency of the legislative body to take over the Pentagon's management function...both in a budgetary and programmatic sense... The last thing we [ought] to do is micromanage. That is the job of the Pentagon.'" (34:82)

SPECTRUMS OF CONFLICT. As one examines the spectrums of conflict in terms of intensity, type, location, and mission area, two factors become apparent. (See Figure 3.) First, there is a growing Air Force participation at the extremes of the spectrums. Space, with emphasis on the strategic defense initiative, satellites, the manned orbital laboratory, etc., and low intensity conflict, emphasizing nation building, special operations, counter-terrorism, etc., are attracting more attention, money, and manpower. These are primarily Active Air Force missions because of their highly specialized, full-time demands even during times of peace. The second factor that is readily apparent is that the ARF, whether by design or accident of history, largely occupies the middle ground of these spectrums. The ARF is better suited for wartime augmentation roles that require relatively low

levels of peacetime activity, such as tactical air, mobility, and some of the special operations and air defense missions.

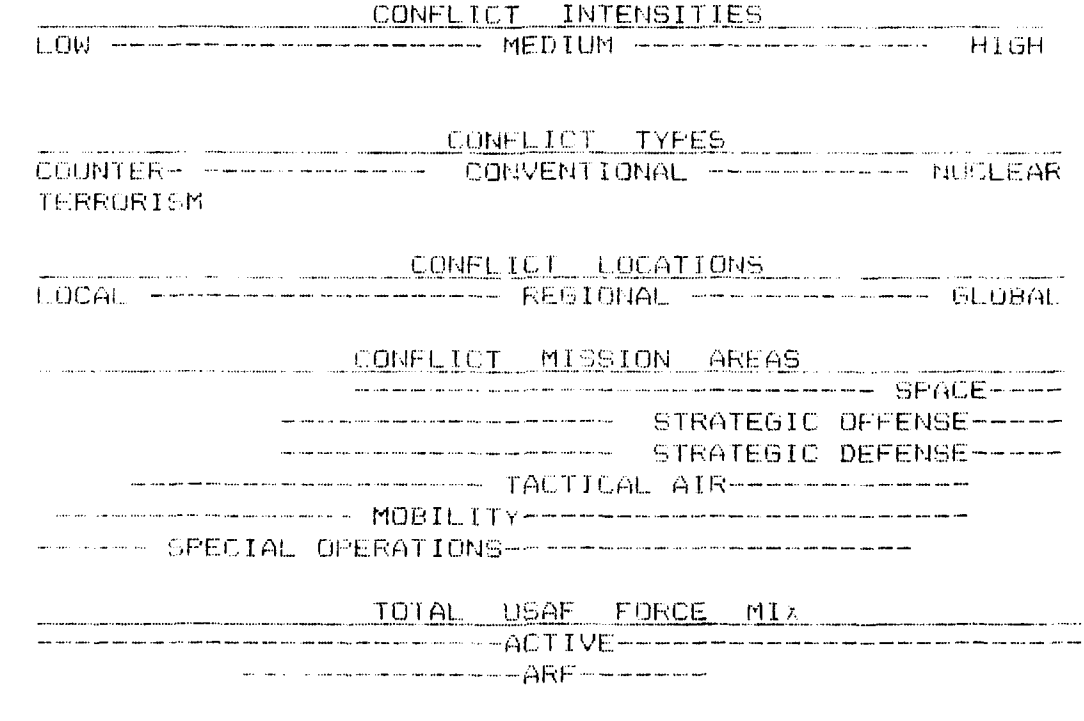


FIGURE 3.
SPECTRUMS OF CONFLICT

Because of growth of new mission areas and fluctuating, cyclic defense budgets, there is increasing pressure to put more and more units and missions into the ARF. This pressure is often economic in that there is a popular perception that ARF units are cheaper. Sometimes the pressure comes from manpower ceilings imposed on the active duty forces which leaves the ARF as the only area for growth to meet wartime commitments. Politics also provides

pressure for ARF growth and improvement through Congressional appropriations to aid local and state economies by buying new equipment and facilities for the ARF.

Regardless of the source of this pressure to increase the size of the ARF or how well-intentioned this pressure might be, this country must look rationally at the mix of forces, both Active and ARF. There are two basic ways to increase the ARF side of the Total Force mix. The first, and historically traditional way, is to transfer units, one for one, from the Active to the ARF. The second is to look exclusively at the ARF and seek ways to improve its capability to augment the Active force. Let's examine each in turn.

IMPLICATIONS FOR TOMORROW'S ARF

CHANGE THE FORCE MIX. In transferring units from the Active to the ARF, one must consider the effects on responsiveness, national strategy and cost. Active units have distinct characteristics in terms of responsiveness. If warning time is critical, as in the case of strategic bomber and missile forces, the Active force is the logical choice for full-time, 24 hour a day alert. (7:285) With less than 30 minutes warning time available in the event of

a missile attack from the Soviet Union, ARF units wouldn't be ready, unless mobilized, for this nearly instantaneous response commitment. (While it is true that some ARF units are on alert for air defense and aerial refueling missions, these are relatively small portions of those units in peacetime.) Warning time is also critical for US forces that are forward deployed overseas. They provide the "trip-wire" response along the Iron Curtain in Europe and the Demilitarized Zone in South Korea to meet US defense commitments. Again, the ARF would be hard pressed to meet those day-to-day missions.

Responsiveness to unmobilized contingencies is another area that favors an Active force. While the ARF participated in Grenada in 1983 and in the Libyan raid in 1986, the preponderance of the forces came from Active units. The Active force has the most modern equipment and, more importantly, the full-time manning and availability to meet the short planning and execution times required during contingencies. (1:57) Entire active units can be placed on alert at their home bases or even moved to overseas locations with little or no disruption of local, state or national economies. Such contingency alerts and deployments for counter-terrorism, hostage situations and military show of force are active duty, peacetime missions for which the ARF isn't appropriate. (15:1-20) If the US is to maintain or increase the responsiveness of its Air

Force, great care must be taken to keep enough units on Active duty to meet challenges across all the spectrums of conflict.

National strategy plays a key role in the decision to transfer units from the Active to the ARF. Our current national strategy calls for Active forces to be forward deployed worldwide to deter aggression. In the event of conflict, these forces must quickly blunt any attack and hold their ground until reinforcements can mobilize and deploy from the US. (21:221) We need to have a large number of Active units at home for a training and rotation base to maintain the current number of Active units overseas. The generally accepted figure is a 3:1 ratio of units at home to units deployed in order to train people to combat readiness before they go overseas, as well as to provide enough assignments in the US so that individuals won't spend the majority of their military careers abroad. (7:276) This latter factor is an increasingly important morale consideration in today's Active Air Force since over 63 percent of its people are married, including 75 percent of its officers. (18:31) Any lengthening of overseas tours or increase in their frequency would likely have adverse effects on recruiting and retention of today's more family-oriented Active force.

If forward deployment is to remain a key component of our national strategy, sufficient Active units must be

on hand to provide an adequate training and rotation base in the US. Except for short deployments and exercises, ARF units don t participate in normal overseas rotations. (31:57) We must consider this in any future force mix decisions.

If, on the other hand, the US decides to go from a forward deployed strategy to a central basing strategy, there could be opportunities for ARF growth. As Active units are withdrawn from Europe and/or Asia, some or all could transfer to the ARF. Each time isolationist sentiment rises in this country, the central basing strategy gains popularity by offering attractive potential savings through eliminating overseas support costs for the withdrawn units and through reducing daily operating costs by placing those units in the ARF.

Central basing does have its own costs, however. To keep our current overseas defense commitments with a central basing strategy, we would have to invest heavily in more airlift and sealift to deploy those US based forces in times of need. (7:219) Even more important than the dollar costs might be the political costs. If the US moved toward more central basing, potential adversaries might become more adventurous, knowing that it would take more time to mobilize and deploy US forces in response. Our allies might also perceive our central basing strategy to be a weakening of US resolve to come to their defense. These

allies might choose more independent stances in their diplomatic and military affairs which could prove to be mixed blessings at best. (7:234)

In changing the US mix of Active and ARF forces, dollar savings are often cited as the primary reason in transferring more units to the ARF. While there may be lower daily operating costs to be achieved in ARF units, there are also many hidden costs in such transfers. As mentioned earlier, the local recruiting base of ARF units and their consequent geographic dispersal cause high construction costs for more facilities which have lower utilization than for similar Active units. (36:220) Another hidden cost is the initial gap in Total Force capability when an Active unit is converted to the ARF. (7:244) It takes a year, or longer, to bring a new ARF unit up to be combat capable. Even then it may be at a lower level of capability than the original Active unit because many ARF units are tasked to perform fewer missions in recognition of the training time constraints of their part-time members. Finally, the current force mix provides a predictable and continuous supply of trained manpower for the ARF which reduces the need to recruit NPS personnel. If more Active units were transferred to the ARF, one could anticipate higher initial training costs for those ARF units as the sources of trained personnel dwindled. (7:4)

ENLARGE EXISTING UNITS. One way to effectively increase the size of the ARF is to enlarge or "robust" existing units so they are equal in size to their Active counterparts. For example, the typical ARF C-130 transport squadron has eight authorized aircraft while the Active squadron has 16. Similarly, the typical ARF fighter squadron has 18 aircraft and its Active counterpart has 24. (7:353) By transferring aircraft and equipment within the ARF to robust some units, other units would be freed to transition to newer aircraft from the Active inventory or from new production. Such robusting would produce some economies of scale in that a C-130 squadron of 16 aircraft doesn't need all of the manpower and ground support equipment that two independent squadrons of eight aircraft do. A close examination of existing tables of allowances and manpower authorizations would reveal the true extent of such savings.

Before concluding that robusting existing units is the panacea for future growth, however, planners should also consider two other factors -- the wartime mission and peacetime demographics. Do the war plans call for beddown of only eight C-130s at some locations, and only eighteen fighters at others. Some plans might call for such small units because of the anticipated tempo of wartime operations or because of parking space limitations. To

robust such units for peacetime economy wouldn't make sense for the wartime mission. Similarly, demographics might be the limiting factor in sizing and locating specific units in peacetime. Economies of scale resulting from robusting units wouldn't matter much if the peacetime recruiting base for a particular region wouldn't support a larger squadron. If, on the other hand, one discovers that the war plans combine small squadrons into larger units to fight the war, and peacetime recruiting could fill the manpower authorizations of larger squadrons, there's a good case for robusting existing units.

CONCURRENT EQUIPPING. There are several advantages in concurrently equipping both Active and ARF units with identical aircraft and systems. From the start, larger and longer production runs of new equipment should yield lower unit costs, particularly when coupled with multi-year contracting. Commonality of equipment would facilitate training since the same technical schools could handle both Active and ARF student loads. Maintenance, supply, and overall supportability would be greatly simplified by having larger inventories of like equipment. (7:179)

Another advantage of standard equipment would be in facilitating joint exercises with the other Services; instead of simulating battlefield conditions with an AFF

still equipped to fight the last war, exercise participants could concentrate on developing and practicing realistic tactics with a total Air Force equipped to fight the next war. If Active and ARF units were identically equipped, the gaining MAJCOMs would find it easier to inspect and evaluate the effectiveness of the entire force. ARF morale would soar, knowing that they had aircraft and equipment for their assigned missions that were effective, supportable and survivable. At the end of the lifespan of a weapon system, near simultaneous phaseout from Active and ARF units alike would preclude the logistics support problems associated with keeping relatively small numbers of aging systems. (7:21)

The greatest advantage of a concurrent equipping policy would be to enhance combat capability. By providing the ARF with the same new production aircraft, electronic warfare pods, and chemical warfare protective clothing that the Active force receives, the fighting capability of the Total Force could increase tremendously without any increases in ARF units or manpower. In a fluid combat environment, a commander would have much more flexibility in moving units and diverting aircraft if standardized equipment ensured equal repair, servicing and rearming at many different airfields rather than each base only being able to handle specific types of aircraft. ARF units would be truly universally assignable without being limited by

obsolescent equipment not capable of meeting the same threats faced by all.

CREATIVE TRAINING. As modern aircraft and weapons systems become more complex, the training of the operators and the maintainers has become more complex and lengthy as well. Today's training courses vary in length from several days to one year, depending on the specialty involved, and individuals often must attend several courses in succession to become fully qualified in their wartime tasks. Such lengthy training is difficult to schedule for part-time members of the ARF who have full-time civilian occupations and careers as well. This is particularly true for newly-recruited members and for entire units transitioning to new equipment.

With this country's increased reliance on the ARF, the Air Force as a whole must apply new technologies and creative training methods to ensure ARF readiness. Instead of having part-time ARF members leave their jobs and homes to attend full-time USAF training courses for eight hours of instruction per day, perhaps they could remain with their jobs and homes and just devote two hours per day in part-time training. By using today's technology to update the correspondence course concept, ARF members could train at home via audio and video cassettes, video discs and small computers. Interactive training with closed circuit

television via cable or satellite and computer networks linked by telephone modems would turn each member's home into a remote classroom.

Even if all USAF training courses couldn't be completed through such an expanded correspondence concept, virtually all courses could at least be shortened to a more reasonable length for the part-time ARF member. The cost of equipping such remote classrooms could be partially offset by reductions in travel, per diem, and active duty pay required for ARF members attending formal training courses. Perhaps more important than cost, however, is the ultimate effect on the individual ARF member. Civilians might be more inclined to join the ARF if less time was required away from their homes and jobs for training. If ARF members could accomplish much of the repetitive, routine, annual training at home, they could use their unit training assemblies for more productive and rewarding group activities such as deployments and exercises with other units and Services. Creative training has much potential for building more combat capability into the ARF and for making best use of the limited availability of its part-time members.

CREATIVE SCHEDULING. With the growing numbers of people in today's ARF, creative scheduling is needed to use their available time in more productive ways. Active Force

units should look at their scheduled duties, workloads, and exercises to see when ARF units and IMAs can augment them on a regular basis in peacetime. (38:125) Currently, for example, some ARF aerial port units deploy to active bases to operate existing aerial ports during their two-week annual tours. ARF medical units augment Active base hospitals during planned exercises. IMA lawyers and chaplains often work weekends on Active bases providing their services to the Total Force while updating the military aspects of their professions.

There are many such applications for increased integration of ARF skills in the peacetime Active force. ARF units specializing in rapid runway repair, construction, communications, and food services could deploy with Active units to provide critical help during exercises. Similarly, ARF units could report to Active bases on weekends to improve existing facilities or to relieve their Active duty counterparts for short periods. (24:55) IMAs with scientific and technical backgrounds could augment research and development laboratories to continue work on current projects during weekends, making better use of the labs and shortening the overall time required for project completion. Seasonal and self-employed workers, students, teachers and university professors can occasionally devote an entire season or sabbatical leave to an extended active duty tour, thus

providing adequate time to contribute significantly to important Air Force projects while honing their wartime skills.

The keys to successful application of such creative scheduling is better understanding of the work that is available, the skills that are needed, and the available time to match the two. The Active force should look for more opportunities to allow the ARF to participate in meaningful tasks that contribute directly to the wartime skills that the ARF needs to practice. The ARF needs to identify more precisely the skills and the availability of its units and IMAs to provide the Active force sufficient lead time to plan productive peacetime training opportunities. The same kind of Total Force effort that goes into preparing the war plans can lead to better utilization of the ARF in peacetime, as well.

CREATIVE DESIGN. Increasing reliance on the ARF in today's defense demands that we take a creative look at the design of tomorrow's weapons systems. Over the years, the DOD has been preoccupied with achieving maximum performance systems, fielding them as quickly as possible, and attempting to contain spiralling costs. [39:12] More recently, reliability and maintainability have received more emphasis. The Air Force Systems Command is working on concepts to enable the Advanced Tactical Fighter (ATF) to

operate autonomously and to be fully mission-capable for 750 flight hours with little or no maintenance. (40:72) Such high tech approaches may work well with the planned Active force of tomorrow, but has anyone anticipated what happens when the ATF is transferred to the ARF?

Tomorrow's ARF may differ significantly from the traditional ARF. Today the ARF still has a large proportion of prior-service people, many of them experienced combat veterans, particularly in the flying units. With the advent of the all volunteer force and the emphasis on keeping as many as possible in full career status, it's conceivable that fewer people will leave the Active force after their initial tours of duty. Couple this with a shrinking recruiting base from which both the Active and the ARF must draw, the ARF will likely have to recruit more and more NPS people. With a higher proportion of less experienced, NPS people in the ARF, will they be able to fly and maintain the ATF and similar high tech weapons systems of tomorrow's Air Force?

Creative design in future weapons systems should include the capabilities of the ARF, since it is likely that most systems will ultimately be used throughout the Total Force. This doesn't mean that tomorrow's systems must be any less capable; it does mean that designers consider the lesser amount of time available for training and perhaps a lower experience level than in past years on

the part of the ARF members who will use those systems. By considering the capabilities of the ARF as well as the Active force, designers should take a new and expanded look at improving reliability, maintainability, and human engineering aspects of future systems and the training needed to support those systems.

MORE ASSOCIATE UNITS. In considering ways to improve the Total Force, leaders would do well to further explore the associate reserve program as a useful organizational innovation. The associate program provides reserve manpower in the form of organized units to fly and maintain Active force aircraft along with Active units. The associate program has been successful since the late 1960s with the Military Airlift Command in augmenting the C-141, C-5, and C-9, and more recently with the Strategic Air Command and the KC-10. Where the aircraft and the equipment have a planned wartime utilization rate that is higher than the actual peacetime requirement, it is very cost effective to train Reservists for that wartime surge rather than keeping a correspondingly larger Active force. (11:117)

The associate concept may be useful in the future fighter world as well. Many current fighter aircraft are limited in their close air support and battlefield interdiction missions because they can't see and hit their

targets at night or in bad weather. Currently, with the short winter days in Europe, A-10s and F-16s would probably fly less than two sorties per day per aircraft in wartime. The Air Force is on the verge of fielding the LANTIRN (Low-Altitude Navigation and Targeting Infrared for Night) system for these aircraft, erasing many of the restrictions of weather and darkness. With LANTIRN, attacking aircraft could fly as many as six or eight sorties per day, limited only by turn-around times for rearming and refueling. (42:55) Future aircraft, such as the ATF, will have similar, if not expanded, capabilities.

To use attacking aircraft around the clock requires much more manpower than is currently authorized; aircrew, maintenance, and munitions functions would have to increase dramatically to support this new warfighting capability. All of this manpower, perhaps two or three times the number required today, would be quite expensive to keep in the Active force. By using the associate concept, the additional people could train with their Active partners on the same aircraft and remain in the ARF ready to meet the wartime surge.

Another area where the associate program might be useful is in planning for chemical and biological warfare. Even with the best protective clothing and shelter systems, flying and servicing aircraft while under a chemical or biological attack would be a slow, deliberate and fatiguing

experience. The impermeable protective clothing is bulky and subject to tremendous body heat build-up, and decontamination shelter procedures require exhaustive care to be effective. Work efficiency is greatly reduced because of these factors, and sortie rates on the aircraft are likely to suffer. By providing additional trained aircrew, maintenance and munitions personnel to augment units under chemical or biological attack, these additional flying and working shifts will reduce individual exposure times, allow more time for decontamination and rest, and perhaps permit a near-normal sortie generation rate on the aircraft. An expanded associate program, with ARF members training with the same Active force equipment and units in peacetime, could provide this vital augmentation in wartime.

MORE INDIVIDUAL MOBILIZATION AUGMENTEES. The IMA program provides approximately 12,000 fully-trained reservists to augment the Active force during contingencies and wartime in a spectrum of assignments almost as broad as the Air Force itself. (43:1) IMA general officers replace many Active generals in critical stateside positions, allowing them in turn to deploy overseas for combat assignments. IMA doctors, lawyers and scientists bring their professional skills when mobilized, as do finance, weather, communications and transportation specialists. During peacetime, these IMAs also provide cost-effective

direct mission support as an adjunct to their training. (44:9)

If there is a need for additional manpower for wartime taskings that isn't currently met by Active and ARF units, the IMA program has the growth potential to fill that need. IMAs assigned to Active units provide a low-cost alternative to forming new ARF units, particularly in geographic areas where the demographics wouldn't support recruiting entire new units but might support smaller groups of individuals. Peacetime construction costs would be negligible since IMAs train with their Active partners in existing facilities.

There are currently 45 Active Air Force bases in the US that don't have ARF units assigned. (45:162-171) If, for example, the Air Force needed additional security police to defend air bases overseas in the event of war and local demographics precluded the formation of new ARF security police squadrons, IMAs might provide the solution. If ten IMAs were recruited at each of the 45 US bases mentioned above to perform their wartime duties at those bases, 450 Active Air Force security police would be freed for the overseas wartime mission. Many of these 45 bases are located away from large metropolitan areas, so recruiting a few individuals would be far easier than recruiting entire units. These IMAs could train at the bases during weekends and in their spare time at minimal

cost. By comparing Air Force-wide wartime manning requirements and the large pool of people available in geographic areas that might not support large AFF units, an expanded IMA program could be an effective way to increase the AFF role in meeting those requirements.

TRAINING TRANSFER FROM CIVILIAN OCCUPATIONS. The Air Force has a program that recognizes the technical and specialized military training courses that its members have taken, and translates these courses into college credits that are accepted by colleges and universities nationwide. Through the Community College of the Air Force, many Air Force people who have attended courses that cumulatively add up to many months, and sometimes years, of training can earn Associate of Arts degrees equivalent to two years of college credit.

Many members of the AFF bring skills and training from their civilian jobs to their units that can, and perhaps should, be credited towards Air Force requirements as well. Commercial airline pilots are a unique group of individuals who possess some qualifications that are directly transferrable. These pilots are licensed by the Federal Aviation Administration (FAA), which requires annual flight physical examinations and periodic altitude chamber training. The Air Force also requires flight

physicals and altitude chamber training for its pilots. For ARF pilots who are also airline pilots, these overlapping requirements represent time that could be better used in practicing their wartime tasks when they report for training with their ARF units. If the Air Force accepted FAA physicals and altitude chamber training, which are virtually identical to its own, the potential savings in time and medical and training costs could be significant.

A substantially smaller savings, although important to the individuals involved, can be found in examining the flying records of pilots who fly like aircraft in the ARF and in their civilian jobs. The KC-10 tanker/cargo aircraft flown by the associate reserve is identical in cockpit layout, procedures and flying characteristics to its civilian predecessor, the DC-10, which is flown by many commercial airlines. Takeoffs, instrument approaches and landings are flown the same way in both the military and the civilian versions of the aircraft. It seems redundant to force an ARF pilot who flies 80 hours a month in a commercial DC-10 to use Air Force KC-10 flying time to accomplish takeoffs, approaches and landings just to satisfy military requirements. This valuable training time could be used by other reserve pilots who don't fly the DC-10 in civilian life, and would allow the DC-10 pilots to concentrate on the aerial refueling and other military

aspects of their training.

Other civilian skills and training might also be directly transferrable and credited towards Air Force requirements. Some civilian law enforcement officials might be excused from Air Force small arms training, particularly since the .38 caliber revolver is commonly used in both worlds. Many people who have medical and cardio-pulmonary resuscitation training in their civilian jobs might log credit for military training as well. By closely examining the civilian skills and qualifications of ARF members, the Air Force could eliminate the unnecessary duplication and overlapping requirements and better use the limited availability of the ARF.

C O N C L U S I O N

Two questions are frequently asked by those to whom the ARF represents a potential solution to rising defense costs: Is there room or potential for growth in the ARF, and, How much cheaper can the job be done by the ARF? Unfortunately, neither of these questions really addresses what should be the bottom line -- the readiness and combat capability of the nation's armed forces. As we have seen, there are significant differences between the Active and Reserve components of the Total Force. To ignore these in the course of making decisions about the structure, roles

and missions of the ARF would be unwise. It is to this end that we have provided some points to ponder as our leaders determine our future force mix.

L I S T O F R E F E R E N C E S

1. Hill, Jim Dan. The Minute Man in Peace and War. Harrisburg Pa: The Stackpole Co., 1964.

2. Cantwell, Gerald T. "The United States Air Force Reserve, 1916-1983. Robins AFB Ga.: Directorate of Historical Services, Hq. AFRES, January 1984, revised March 1984.

3. "Approved War Department Policies Relating To Post War National Guard And Organized Reserve Corps, 13 October 1945." USAF Historical Research Center, Maxwell AFB, Ala.

4. Organization Of Air National Guard Units. Letter, Chief, National Guard Bureau to the Adjutants General of All States, Hawaii, Puerto Rico and the District of Columbia, 9 February 1946. USAF Historical Research Center, Maxwell AFB Ala.

5. "A Plan For The Air National Guard, 8 November 1945." USAF Historical Research Center, Maxwell AFB Ala.

6. Cantwell, Gerald T. The Evolution and Employment of the Air Force Reserve as a Mobilization Force, 1946-1980. Robins AFB Ga.: Directorate of Historical Services, Hq, AFRES.

7. U.S. Congress. House. Committee On Armed Services. An Overview Of U.S. Commitments And The Forces Available To Meet Them. Hearings Before The Military Personnel and Compensation Subcommittee Of The Committee On Armed Services, House Of Representatives. 98th Cong., 1st Sess., 1983.

8. Galloway, Eilene. History of United States Military Policy on Reserve Forces, 1775-1957. Washington D.C.: United States Government Printing Office, 1957.

9. "Aerospace World", Air Force Magazine, January 1984, pp. 28-40.

10. "Air National Guard Aircraft - How Many, How Old", Air Force Magazine, Vol 69, No 5., May 1986, p. 189.

11. "Air Force Reserve Aircraft - How Many, How Old", Air Force Magazine, Vol 69, No 5., May 1986, p. 190.

12. Schank, John F.; Bodilly, Susan J.; and Pei, Richard Y. Unit Cost Analysis: Annual Recurring Operating And Support Cost Methodology. Santa Monica Ca.: Rand Corporation, 1986.

13. The Air Force Reserve, The Air Force Management Assistance Group Final Report, 30 April 1982.

14. Annual Report of the Reserve Forces Policy Board, Fiscal Year 1985, Washington D.C.: U.S. Government Printing Office, 1986.

15. Brinkerhoff, John R. and Grissmer, David W., "The Reserve Forces In An All Volunteer Environment." Paper presented at the U.S. Naval Academy Conference: The All Volunteer Force: Retrospect and Prospect. Newport, R.I., 4 November 1983.

16. Wermuth, Anthony L. Population, Demography, and National Strategy. Carlisle Barracks, Pennsylvania: U.S. Army War College, 10 July 1978.

17. Marquotta, Franklin D.; Brown, James.; and Collins, Michael J., Gen. eds. Changing U.S. Military Manpower Realities. Boulder, Colorado: Westview Press, 1983.: U.S. Reserve Forces: The Achilles' Heel Of The All Volunteer Force", Moxon, Arthur L.

18. Defense 86, Arlington Va.: Armed Forces Information Service, September/October 1986.

19. Flying Training, A-7 Aircrew Training, Tactical Air Command Manual 51-50, Vol III. Langley AFB Va.: Hq. Tactical Air Command, 16 August 1979.

20. One Liners, United States Air Force, Washington D.C.: Secretary of the Air Force, Office of Public Affairs, April 1985.

21. Report of the Secretary of Defense, Caspar W. Weinburger, to the Congress on the FY86 Budget and the FY 1988-92 Defense Progams, Washington D.C.: U.S. Government Printing Office, January 12, 1987.

22. Castro, Steve A. "Congress Attempts At Budget Reform: The Impact Of The Congressional Budget Office On The Defense Budget Process." Thesis, Naval Postgraduate School, 1981.

23. Lenhart, Warren W. The Mix Of United States Active And Reserve Forces. Washington, D.C.: The Library of Congress, November 4, 1983.

24. Wilson, Bennie J. III., Gen. Ed. The Guard And The Reserve In The Total Force. Washington, D.C.: National Defense University Press, 1985: Active Force Perceptions of the Air Reserve. Ball, Gerald D. and Bush, Frederick E. Jr.

25. "Reason For Being." Citizen Airman, April 1-85, pp. 29-32.

26. Congressional Quarterly Inc. How Congress Works. Washington D.C.: Congressional Quarterly Inc., 1983.

27. Wilson, Bennie J. III., Gen. Ed. The Guard And The Reserve In The Total Force. Washington, D.C.: National Defense University Press, 1985.

28. Morgan, F.J. and Paulson, P.M. Total Force Options: Active/Reserve Cost And Capability Comparisons. Santa Monica Ca.: The Rand Corporation, 1975. For Official Use Only.

29. Hart, Gary, and Lind, William S. America Can Win. Bethesda Md.: Adler and Adler, 1986.

30. Schank, John F.; Bodilly, Susan J.; and Pei, Richard Y. Unit Cost Analysis: Executive Briefing. Santa Monica Ca.: Rand Corporation, 1986.

31. Statement Of Assistant Secretary of Defense (Reserve Affairs) James H Webb, Jr. Hearings Before The Subcommittee On Manpower And Personnel Senate Armed Services Committee, February 28, 1985.

32. "Transfer of Missions To The ARF" HQ USAF/RE Point Paper, Washington D.C., 7 August 1984.

33. Directorate of Programs & Evaluation (AF/PREP). The Planning, Programming and Budgeting System (PPBS), A Primer. Washington, D.C.: Department of the Air Force, December 1987 (4th Edition).

34. Ulsamer, Edgar. "Goldwater's Parting Shot." Air Force Magazine, February 1987, pp. 78-83.

35. Report of the Secretary of Defense, Caspar W. Weinberger, to the Congress on the FY87 Budget, Washington D.C.: U.S. Government Printing Office, February 5, 1986.

36. Bowman, William.; Little, Roger.; and Sicilia, G. Thomas. The All Volunteer Force After a Decade, Washington D.C.: Pergamon-Brassey's International Defense Publishers, 1986.

37. The USAFE Objective and Capability Plan FY 1986-2000. Washington D.C.: HQ U.S. Air Force Reserve, 1 December 1984. SECRET.

38. Merritt, Hardy L. and Carter, Luther F., Gen. Eds. Mobilization And The National Defense. Washington, D.C.: National Defense University, 1985.

39. Binkin, Martin. Military Technology and Defense Manpower. Washington D.C.: The Brookings Institution, 1986.

40. "What's Happening At ASD." Air Force Magazine, January 1987, pp. 66-79.

41. Air Reserve Forces 2000: The Total Force Entering The 21st Century, Washington D.C.: Department of the Air Force, 6 April 1983.

42. "Where TAC Is Heading." Air Force Magazine, June 1984, pp. 51-58

43. AFRES Pocket Summary, FY 86, Headquarters, Air Force Reserve, June 30, 1986.

44. "Talking Total Force." Citizen Airman, June 1986, pp. 8-11.

45. "Guide To USAF Bases At Home And Abroad." Air Force Magazine, May 1986, pp. 162-171.

GLOSSARY

ANG	Air National Guard
AFR	Air Reserve Forces
ATF	Advanced Tactical Fighter
CR	Continuing Resolution
CRAF	Civil Reserve Air Fleet
DOD	Department of Defense
FAA	Federal Aviation Agency
FYFP	Force and Financial Program
FY	Fiscal Year
FYDP	Five Year Defense Program
IMAs	Individual Mobilization Augmentees
LANTIRN	Low Altitude Navigation and Targeting Infrared for Night
MAJCOMS	Major Commands
NPS	Non Prior Service
O & S	Operations and Support
POM	Program Objective Memorandum
PPBS	Planning, Programming, and Budgeting System
SecDef	Secretary of Defense
US	United States
USAF	United States Air Force

END

DATE

FILM

JAN

1988